MCFRS
PERFORMANCE PLAN FY10

FIRE CHIEF
RICHARD R. BOWERS

MCFRS AT A GLANCE

What MCFRS Does and for Whom	How Much
Mission The Mission of the Montgomery County Fire and Rescue Service is to protect lives, property, and the environment with comprehensive risk reduction programs; and safe, efficient, and effective emergency response provided by skilled, motivated, and compassionate service providers representing Montgomery County's diverse population.	**FY09 Statistics** • Operating Budget: $191.7 million • Work Years (WYs): 1353 • 1165 County-employed emergency positions • 832 volunteer emergency personnel (FFII and above or EMS Provider I and above) • 109 County-employed technical and administrative positions • 47 work sites, including 34 stations • 33 engines, 25 ambulances, 17 paramedic units, 15 aerial units, 7 heavy rescue squads, 7 tankers
Emergency Response Response to emergency medical, fire, rescue, hazmat, and destructive device incidents throughout the County. Incidents to which MCFRS responds occur on or in residences, other buildings, vehicles, highways, railways, woodlands, farmland, parks, and bodies of water.	**FY09 Statistics** • Budget: $144 million; WYs: 1082 • 105,735 incidents: - 77,646 EMS incidents - 28,089 fire, hazmat, rescue, and other incidents • 183,407 unit responses
9-1-1 Call-processing and Dispatch MCFRS personnel at the Emergency Communications Center take/process calls for assistance and dispatch MCFRS resources. They also provide pre-arrival instructions to the 9-1-1 caller, as appropriate.	**FY09 Statistics** • Budget: $7.7 million; WYs: 59 • Emergency calls processed: 105,735 • Non-emergency calls– incoming/outgoing: 132,000 • Total calls: 237,735
Fire Marshal's Office Fire Code Enforcement (FCE) personnel inspect buildings for fire code violations, conduct system tests, and review building plans for code compliance. FCE personnel provide guidance to building owners on correction of violations and conduct re-inspections to ensure code compliance. Fire & Explosive Investigations (FEI) personnel perform investigations of major fires, potential arsons, fires involving injuries or deaths, and incidents involving actual or potential destructive devices. FEI has a certified accelerant detection dog to assist in arson investigations.	**FY09 Statistics** • FCE Budget: $6.8 million; WYs: 42 • Inspections: 24,633 • Operational Permits Issued: 19,093 • FEI Budget: $2.1 million; WYs: 13 • FEI Investigations: - Fire: 367 - Explosive: 271

Training of Firefighter-Rescuers	FY09 Statistics
MCFRS firefighter-rescuers receive required training at the Fire-Rescue Training Academy, through drills at stations and in the field, and via on-line courses to achieve certifications in fire, rescue, EMS, hazmat, and command competencies. Potential recruits are mentored via the Candidate Physical Ability Training (CPAT) program to develop their physical abilities demanded by the job.	• **Budget: $6.65 million, WYs: 61** • **325 classes taught** • **8750 students attending** • **350,700 student hours**
Public Information and Fire Safety & Injury Reduction Education **The Public Information Office provides incident, safety, and other departmental information to the public via the broadcast and print media and via the internet.** **MCFRS provides fire safety and injury prevention education, child safety seat inspections, and other risk reduction programs. Emphasis is placed on children, seniors, immigrants, health care facility operators, and residents of high-rises.**	**FY09 Statistics** • **Budget: $626,000; WYs: 4** • **~10,000 media calls handled by PIO** • **~250 news advisories and releases** • **29,555 residences visited, with 943 smoke alarms and 1089 batteries installed, through the "Safety In Our Neighborhood" program** • **8230 child safety seats inspected** • **72 Safe Kids outreach events held** • **54 public and private schools participated in Risk Watch program**
Firefighter-Rescuer Wellness and Safety **The Fire-Rescue Occupational Medical Section provides annual physicals, coordinates medical care for injured personnel, and provides related wellness services to keep our personnel healthy and return those injured to active service. Safety Officers inspect equipment and facilities and oversee personnel safety at major incidents.**	**FY09 Statistics** • **Budget: $10.85 million, WYs: 12** • **2144 annual physicals conducted** • **8 "life saves"of firefighter-rescuers by FROMS (41 cumulative)** • **450 personal protective gear inspections by Safety Office** • **47 work site inspections** • **8% decrease in workman's compensation claims**
Apparatus Management **The Apparatus Section implements the Apparatus Management Plan. Apparatus and equipment purchase, inspection, testing, and maintenance is overseen by this Section with the exception of that handled directly by LFRDs. The new MCFRS central maintenance facility will be operated by the Apparatus Section.**	**FY09 Statistics** • **Budget: $5.2 million; WYs: 7** • **Received: 35 pumpers, 3 rescue squads** • **600 DOT-mandated vehicle inspections performed** • **52 pumps tested; 27 aerial devices tested**

MCFRS CONTRIBUTION TO "*MONTGOMERY RESULTS*:"

- **SAFE STREETS AND SECURE NEIGHBORHOODS**

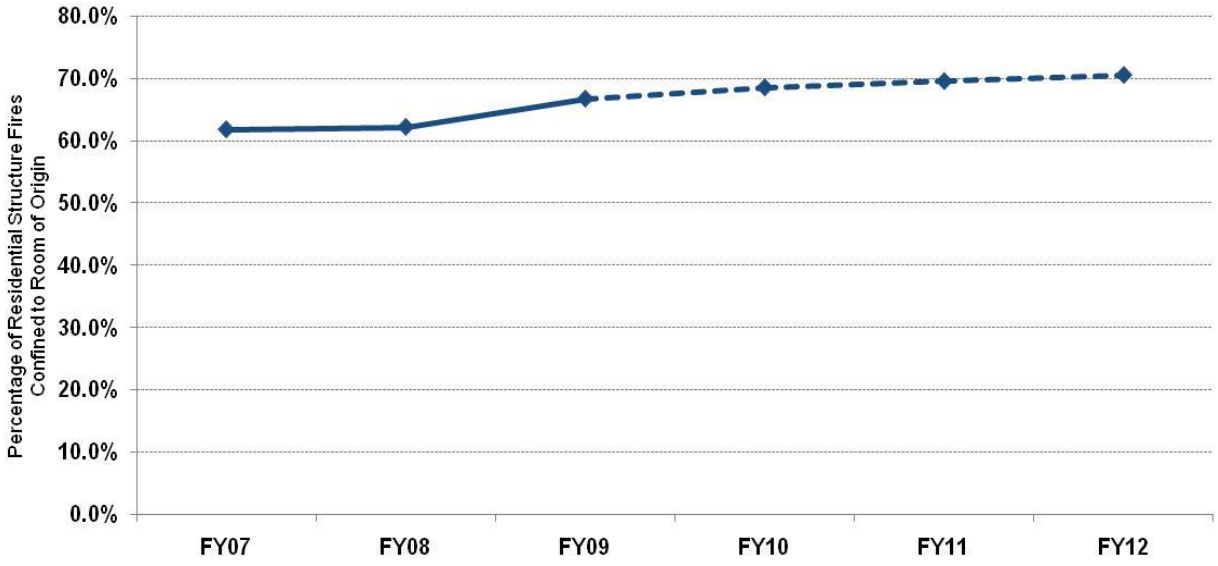
MCFRS HEADLINE PERFORMANCE MEASURE #1

PERCENTAGE OF RESIDENTIAL STRUCTURE FIRES CONFINED TO THE ROOM OF ORIGIN

1 – CONTRIBUTION TO MONTGOMERY RESULTS

- **Safe Streets and Secure Neighborhoods**

2 – PERFORMANCE



The solid line in the above graph presents actual historical data for FY07-09. The dashed line indicates projected performance based on the trend as well as derived benefits of programmatic actions, initiatives, and resource enhancements to be implemented.

3 – STORY BEHIND THE PERFORMANCE

Many factors contribute or restrict the ability of MCFRS to confine residential structure fires to the room of origin. These factors are presented below in order of priority.

RESTRICTING FACTORS

FACT: For each minute of fire growth (absent suppression actions) in a residential structure, the fire doubles (on average) in size!

a. **Response time exceeding goal**: As illustrated and addressed in Performance Measure #2, MCFRS is not fully meeting the County Council-adopted response time goal of 6 minutes[1] for first-due engine on structure fires. After 6 minutes, the chances of containing a fire to the room of origin are greatly reduced, with flashover (i.e., the point at which the room of origin becomes engulfed in flames instantaneously) typically occurring within 6 to 9 minutes of ignition[2]. Once flashover has occurred, fire will spread rapidly beyond the room of origin.

b. **Insufficient suppression resources**: The County lacks sufficient suppression capabilities in areas experiencing the highest rate of growth – suburban areas and, to a lesser extent, rural areas – where there are gaps in 6-minute response coverage due to an insufficient number of fire stations. In addition, service demand is increasingly causing engines stationed closest to a reported residential fire to be increasingly unavailable. When the first-due engine is unavailable to respond, the next closest engine is dispatched which increases the distance and time the unit must travel to reach the fire; thus allowing the fire to grow in size and intensity (absent automatic sprinkler activation).

c. **Inadequate staffing levels on suppression units**: By the end of FY09, 46% of MCFRS frontline engines and aerial units had the NFPA 1710-recommended staffing level of four personnel around the clock. The other 54% had guaranteed staffing of only three personnel; occasionally greater than three depending upon volunteer staffing levels. The Maryland Occupational Safety and Health Administration's "2 in - 2 out" rule requires, whenever an IDLH[3] condition is present, that two firefighters be in place outside a burning structure (serving as a rescue team) before a two-person entry team is allowed to gain entry to attack the fire.[4] In rural and suburban areas where the first-due engine may be the sole unit on-scene for several minutes, interior firefighting cannot be initiated until the next unit arrives and the "2-out" requirement is satisfied.

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[1] Goal is 6 minutes to 90% of fires in urban zone, 75% of fires in suburban zone, 50% of fires in rural zone

[2] Some fires reach flashover before 6 minutes (e.g., incendiary fires; fires involving improperly stored flammable materials such as in an illegal drug lab). The type of construction and furnishings can also be a factor in flashover occurring sooner than 6 minutes. Some fires have reached flashover before being reported. In all of these cases, confining the fire to the room of origin will be improbable if not impossible.

[3] IDLH – Immediately dangerous to life and health

[4] The only exception to the "2 in - 2 out" rule is when it is evident or believed that occupants are trapped inside the burning structure.

CONTRIBUTING FACTORS

a. **Early fire detection:** Detection of fires while in their initial stage allows early reporting to the Emergency Communications Center (ECC) which, in turn, leads to quicker dispatch and response of fire suppression resources. Residential fire detection systems that send a signal to a central monitoring service ensure the ECC is notified quickly, even when residents are not home. When smoke alarms are not monitored, residents must contact the ECC themselves which may result in delayed reporting of the fire which then results in delayed response.

b. **Presence of a sprinkler system**: Automatic sprinkler systems are a resident's best defense against a serious fire because sprinklers confine or extinguish fires, save lives, and reduce property damage. Sprinklers are designed to operate in the early stages of a fire; thus controlling or extinguishing flames before spreading beyond the room of origin.

c. **Readily available and sufficient quantity of water**: Water is not readily available and in sufficient quantity throughout much of the County's non-hydranted area; however, MCFRS is in the process of enhancing water delivery in rural areas. During FY10, MCFRS will be completing the implementation of the department-wide capability to suppress fires with compressed-air foam (CAF) through its new fleet of 39 CAF system-equipped pumpers. CAF extinguishes fire quicker and more effectively than larger quantities of water alone and prevents re-ignition during salvage and overhaul operations. Other equipment on the new pumpers that contribute to water delivery and pumping capacity include large volume pumps (1500 gpm) and larger amounts of large-diameter (4-inch) hose which allows MCFRS to move greater quantities of water greater distances with fewer resources. When MCFRS acquires a new tanker for Germantown-Kingsview Station 22, that will add a seventh frontline tanker to the MCFRS fleet and allow Tanker 714-B (presently on loan to Station 22) to become the County's first reserve tanker.

d. **Appropriate suppression strategy and tactics**: Through use of "RECCEOVS" tactics[5], the first hose line is immediately advanced to the room of origin to confine the fire and protect any trapped occupants as well as firefighters searching for them.

e. **New fire stations in Germantown**: By the 4th quarter of FY10, two new fire stations will have opened in Germantown, one on the west side and one on the east side of town[6]; thus increasing the number of engines in this high-growth area by two. This will increase the depth of resources in the up-county and allow faster response; thus increasing the percentage of residential fires confined to the room of origin.

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[5] Basic firefighting strategy and tactics are based on the RECCEOVS concept which identifies fire ground priorities as: **r**escuing occupants, covering **e**xposures, **c**onfining the fire to the area involved, **c**ontrolling the fire, **e**xtinguishing the fire, and conducting **o**verhaul, **v**entilation and **s**alvage operations.

[6] Germantown-Kingsview Station opened in March 2009. Opening of the Germantown-Milestone Station is anticipated in FY10-Quarter 4.

f. **Phase 2 of four-person staffing:** Implementation of Phase 2B of the MCFRS' four-person staffing plan occurred in FY09, adding a fourth person on a designated group of four down-county engines (i.e., E706, E712, E718, E719). Four-person staffing allows the first-arriving engine to begin interior fire attack immediately without having to wait for another unit to meet State "2 in – 2 out" requirements. Quick interior attack leads to achievement of a higher percentage of fires confined to the room of origin and reduces the number of resources required for mitigation, thus preserving capacity for additional incidents.

g. **Other contributing factors**: Other factors contributing to the confinement of residential fires to the room of origin include well-trained firefighters as well as code-compliant construction. Well-trained firefighters ensure the effectiveness of fire suppression tactics, and code-compliant construction contributes to preventing or slowing the spread of flames beyond the room of origin.

WHAT WE PROPOSE TO DO TO IMPROVE PERFORMANCE

To move toward meeting the MCFRS' short-term goal of confining fires to the room of origin in 80% of residential fires, MCFRS plans to implement the following actions, programs, and initiatives during FY10-11:

a. **Establish an interim station in the Travilah area**: Until the proposed permanent Travilah Fire Station is built and opened in FY13 (anticipated), MCFRS is recommending the establishment of an interim station on the PSTA property housing an engine and EMS unit staffed 24/7. These units would address a significant call load within the Travilah/Traville/Fallsgrove area and increase the depth of fire suppression and EMS resources in the up-county. The additional units would allow faster first-due engine and EMS response to the Travilah/Traville/Fallsgrove area and allow faster assembly of suppression forces (i.e., box alarm assignment) within the up-county area as a whole; thus increasing the percentage of fires confined to the room of origin.

b. **Reduce response time**: Response time to residential fires can be reduced county-wide by taking steps to reduce ECC call-processing and dispatch time and by improving turnout time. Fire Chief's General Order 09-19 was recently issued concerning modification of the pre-alert for full-assignment fires that is expected to reduce call processing time by 30 seconds and provide critical information to the field more rapidly. Upgrades to the County's communications system, including the computer aided dispatch (CAD) system and station alerting system, is being planned (ref. - Public Safety Systems Modernization Plan, July 2009) and will lead to faster ECC call-processing and dispatch which will improve overall response time. [Note: Response time is further addressed in Measure #2.]

c. **Continue implementation of 4-person staffing**: Partial implementation of Phase 3 (i.e., Phase 3A) of MCFRS' four-person staffing plan is planned for FY10 utilizing federal SAFER grant moneys. Phase 3A will add a fourth person to a designated group of three engines. Phase 3B - to be implemented in a future fiscal year (potentially FY12), will add a fourth person to five additional engines to complete Phase 3. Four-person staffing of engines allows the first-arriving engine to begin interior fire attack immediately without having to wait for another unit to meet "2 in – 2 out" requirements of the Maryland Occupational Safety & Health Administration. The fourth person provides improved occupant and firefighter safety and the ability to deploy hose lines and achieve rapid rescue of persons trapped by fire.

d. **Improve water availability**: Through recently initiated efforts to improve Insurance Services Office (ISO)-issued fire protection ratings for Montgomery County (i.e., ISO Class 4 in hydranted areas and ISO Class 9 in non-hydranted areas), MCFRS will be taking steps to increase the number of ISO-certified static water supply sources throughout areas lacking hydrants. This will involve the installation of strategically located underground cisterns as well as the installation of dry hydrants and suitable access to drafting sites (e.g., lakes, ponds, streams).

e. **Compressed-air foam** – Upon completion of the deployment of the new fleet of compressed-air foam system (CAFS) pumpers countywide, MCFRS will realize faster control and extinguishment of fires. CAFS results in a 40% reduction in the weight of any attack line which allows faster advancing of the attack line plus faster knockdown of the fire due to CAFS dual action of cooling and smothering the fire.

f. **Retrofit unsprinklered residential high-rises**: To address the county's 84 high-rise and mid-rise apartment buildings lacking sprinkler systems, MCFRS will continue advocating for legislation requiring sprinkler retrofitting. The MCFRS Code Enforcement Section will also continue working with the Apartment and Office Building Association to encourage building owners to voluntarily install sprinklers to increase occupants' safety and to realize savings on insurance premiums. [Sprinkler retrofitting is further addressed in Measure #3.]

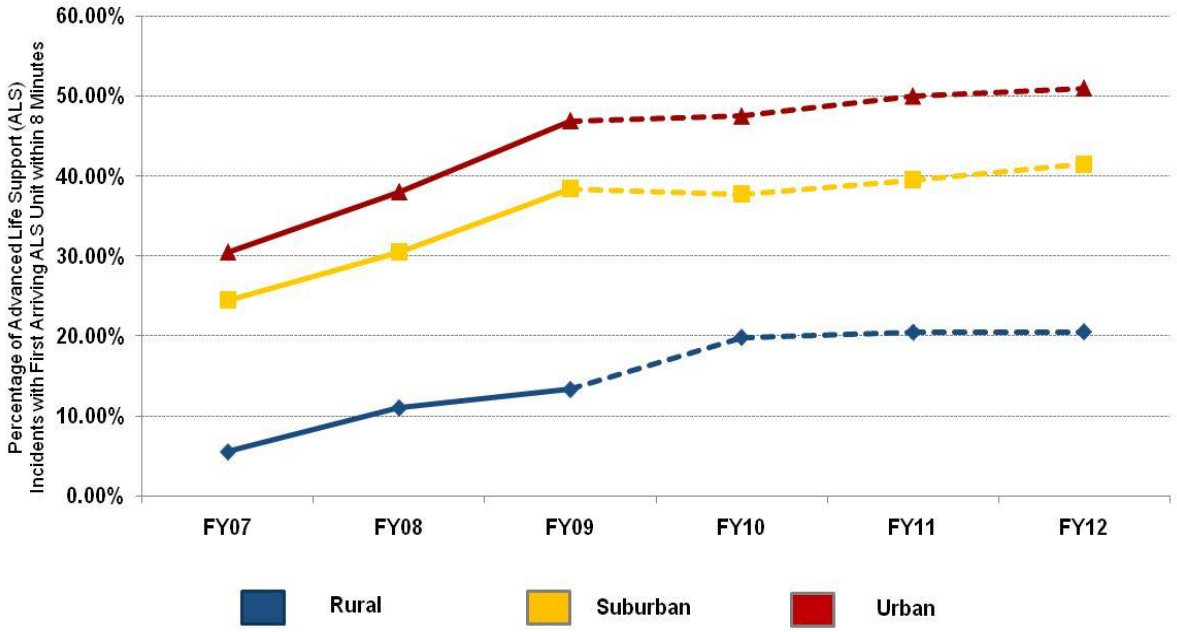
MCFRS HEADLINE PERFORMANCE MEASURE #2

RESPONSE TIME TO ADVANCED LIFE SUPPORT AND STRUCTURE FIRE INCIDENTS

1 – CONTRIBUTION TO MONTGOMERY RESULTS

- **Safe Streets and Secure Neighborhoods**

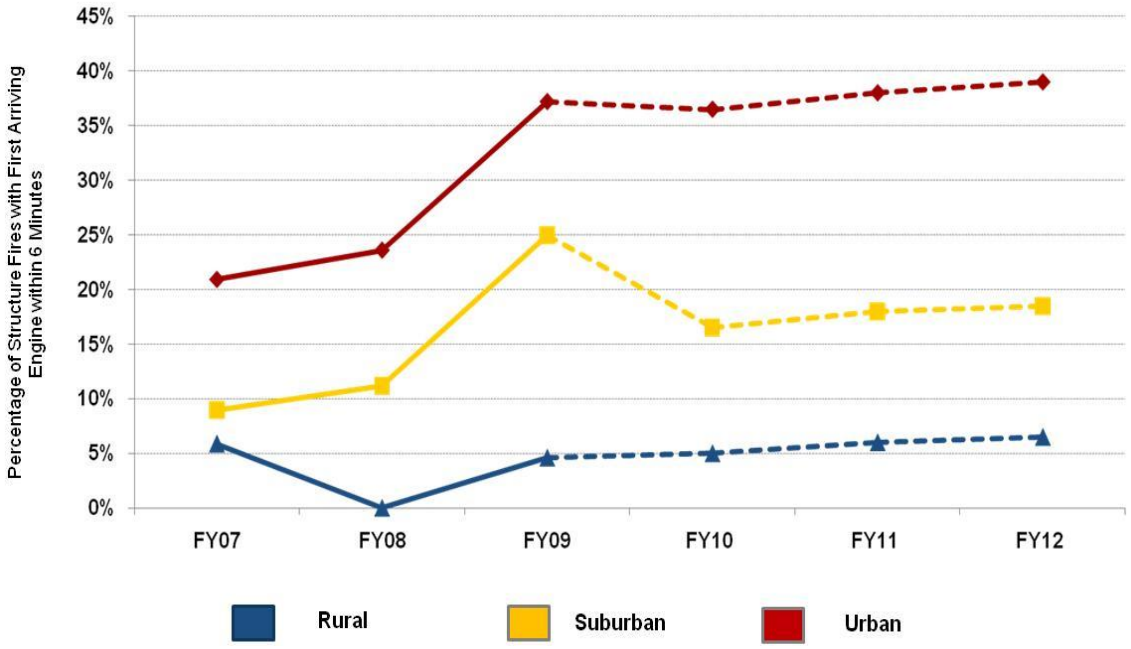
2 – PERFORMANCE



The graph above indicates response performance relating to advanced life support (ALS) incidents. Solid lines indicate actual historical data for FY07-09, and dashed lines indicate projected performance based on trends as well as derived benefits of programs, initiatives, and resource enhancements to be implemented. An ALS unit, in the context of this performance measure, is a Medic Unit or an ALS first-responder apparatus (AFRA) such as an engine with a firefighter-paramedic on board. ALS units provide the highest level of pre-hospital patient care based on advanced training of personnel and specialized equipment carried. It is important to note that this graph does not reflect response time of basic life support (BLS) first-responders (i.e., EMT-Bs aboard an ambulance, engine, aerial unit, rescue squad, or other unit), often arriving before ALS

units. The response time goal for a BLS first-responder unit is 6 minutes versus 8 minutes for an ALS unit. BLS first responders are trained, certified, and equipped to perform basic life support services, including life saving actions such as rescue breathing, cardiopulmonary resuscitation (CPR), and use of automated external defibrillators (AEDs).

The graph below indicates response performance relating to structure fires. Solid lines indicate actual historical data for FY07-09, and dashed lines indicate projected performance based on trends as well as derived benefits of programs, initiatives, and resource enhancements to be implemented.



3 – STORY BEHIND THE PERFORMANCE

Several factors contribute or restrict the ability of MCFRS to reach the scene of life-threatening medical emergencies and structure fires in time to save lives, prevent injuries, and have a major impact on minimizing property damage. These factors are presented below in order of priority.

RESTRICTING FACTORS

FACT: For each minute that elapses following cardiac arrest, absent the provision of effective cardiopulmonary resuscitation and/or defibrillation, the patient's chances of survival decease by approximately 10%.

a. **9-1-1 call-taking, call processing, and dispatching of units:** Presently, the ECC averages 2.4-3.1 minutes per 9-1-1 call[7] obtaining vital information from those reporting emergencies, processing that information, and dispatching appropriate units. Time-consuming protocols (e.g., State-mandated Emergency Medical Dispatch protocol) and a cumbersome computer-aided dispatch system are largely responsible for this problem. NFPA Standard 1221 states that ECC call-taking, call processing, and dispatch should require no more than one minute. Likewise, the response time model[8] employed by MCFRS assumes one minute for this process. It is noteworthy that call processing and dispatch time by MCFRS has improved considerably during CY2009 due to procedural changes that have reduced call processing/dispatch time concerning the most critical call types: ALS-2 and full assignment (fire) incidents.

b. **Turnout time**: Currently, the average turnout time[9] for all incident types combined is about 1.1 minutes, ranging from 0.5 minute for a full assignment (fire) incident to 1.2 minutes for a BLS incident. Average turnout time for ALS incidents is 1.1 minutes. Turnout time for full assignments (fire) is noticeably less than for EMS incidents due to use of the pre-alert which provides personnel an advanced notification of a full assignment about to be announced. The overall turnout time average is skewed upwardly by EMS incidents because they greatly outnumber the full assignment (fire) incidents, and a pre-alert is <u>not</u> applicable for use for EMS incidents. It is noteworthy that turnout times for EMS incidents have improved by about 0.1-0.2 minute since CY2008 but must be reduced further to achieve the 1-minute goal.

Factors impacting turnout time include: distance personnel must travel to reach apparatus, safety requirements (i.e., donning protective gear and fastening seat belts before departure), perceived urgency of the incident, and type of incident (e.g., a structure fire incident with the potential for trapped occupants will typically prompt a faster turnout than would a basic life support EMS incident).

c. **Travel time**: Travel time for responding MCFRS apparatus is an issue in much of the county, particularly in suburban and rural areas. Travel time issues can be broken down into three primary factors; each described below.

- **Insufficient resources:** See item "b" under Restricting Factors in Performance Measure #1. The problem applies to EMS resources as well as fire resources.

- **Insufficient staffing levels on suppression units:** See item "c" under Restricting Factors in Performance Measure #1.

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[7] Average call processing time varies depending upon the type of emergency: ALS-2 incident = 147 sec., ALS-1 incident = 165 sec., BLS incident = 174 sec., full assignment (fire) = 187 sec. [Ref: Sept. 2009 data]

[8] The MCFRS definition of response time, used in the response time model and upon which response time goals are based, is: **the elapsed time from receipt of 9-1-1 call by MCFRS call-takers to arrival of unit(s) at the incident scene**.

[9] Turnout time is the time between dispatch of units and departure of units from their station.

- **Road/traffic conditions:** Traffic congestion has a negative impact on response time as do road conditions such as potholes, wetness, ice/snow, and traffic calming devices.

CONTRIBUTING FACTORS

a. **Station distribution within urban areas**: The down-county area, in general, has an adequate distribution of fire-rescue stations and resources which positively impact response time. Consequently, response times in the down-county are closer to established goals than elsewhere in the County.

b. **New up-county stations**: By late FY10, two new fire stations will have opened in the Kingsview and Milestone areas of Germantown. In addition, an interim station (to be followed by a permanent station) is recommended for the Travilah/Traville area. The EMS and fire suppression resources deployed at these new stations will reduce response times in these high call volume areas of the up-county.

c. **Implementation of four-person staffing**: Implementation of Phases 1 and 2 of the MCFRS' four-person staffing strategy between FY07 and FY09 has added a fourth person on a 24/7 basis to 21 engines and one aerial unit. These four-person units, having one firefighter-paramedic and three firefighters on board, serve as ALS first-responder apparatus (as well as fire suppression units) to greatly increase the ALS capacity of the department. One major result of this deployment has been improved ALS response time county-wide.

d. **Modification of ALS Call Processing and Dispatch**: Fire Chief's General Order 09-07 was implemented in 2009 to modify the procedure for ALS call processing and dispatch. ALS calls were designated as ALS-1 (requiring one ALS provider) or ALS-2 (requiring two ALS providers). ALS-2 calls are the most critical life-threatening emergencies – Echo and certain Delta calls – where two paramedics are required. With ALS-2 calls, ECC personnel do not have to wait until the conclusion of the time-consuming EMD protocol to dispatch ALS units; thus improving call processing/dispatch time as well as overall response time. With ALS-1 calls, ECC personnel must wait until the conclusion of the EMD protocol to dispatch ALS units.

e. **New roads**: The opening of new roads provides MCFRS units more direct routes of travel to incidents as well as more alternatives when preferred routes of travel are congested or blocked. The future Inter-County Connector and the Montrose Parkway will result in improved response times in portions of the county served by these roads.

WHAT WE PROPOSE TO DO TO IMPROVE PERFORMANCE

To move toward meeting the MCFRS' response time goals for ALS incidents and structure fires, MCFRS plans to pursue the following actions, programs, and initiatives between FY10 and FY12:

a. **Reduction in time taken to process 9-1-1 calls and dispatch units**: Resources and procedural changes that are needed to accomplish this reduction include:
    - Additional ECC personnel
    - Modification of time-consuming State and County protocols and procedures that unnecessarily delay call-processing and dispatch
    - Upgrades to the County's communications system, including the computer aided dispatch (CAD) system and station alerting system, are being planned (ref. Public Safety Systems Modernization Plan, July 2009) and will lead to faster ECC call-processing and dispatch as well as faster turnout time

b. **Reduction in turnout time:** Resources and procedural changes that are needed to accomplish this reduction include:
    - Development of turnout time goals that balance speed and safety
    - Strict supervision by MCFRS battalion chiefs, station commanders, and unit officers to ensure personnel are meeting turnout time goals
    - Strategic use of pre-alerts that may result in faster turnout times
    - Replacement of the station alerting system

c. **Reduction in travel time:** Resources and procedural changes that are needed to accomplish this reduction include:
    - Strategically placed stations – to be accomplished by adding new stations and, where appropriate, relocating existing stations
    - Full implementation of the four-person staffing plan and 1 and 1 ALS model
    - Deploying additional apparatus/staff and deploying them strategically
    - Continued community outreach campaign (i.e., "Hear Us, See Us, Clear for Us" campaign initiated in FY06) that encourages motorists and pedestrians to yield right-of-way to responding MCFRS vehicles
    - To the greatest extent possible, use of response routes that lack traffic calming devices

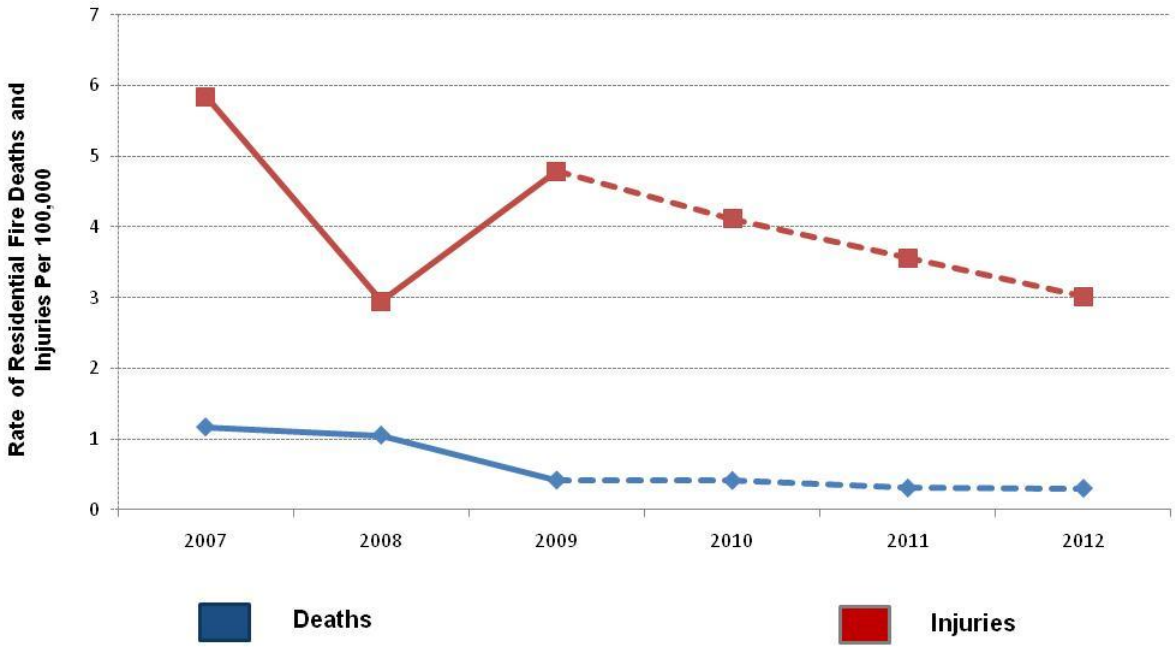
MCFRS HEADLINE PERFORMANCE MEASURE #3

NUMBER OF RESIDENTIAL FIRE DEATHS AND INJURIES PER 100,000 RESIDENTS

1 – CONTRIBUTION TO MONTGOMERY RESULTS

- **Safe Streets and Secure Neighborhoods**

2 – **PERFORMANCE**



The graph above indicates the annual number of past and projected civilian fire **deaths** per 100,000 residents (blue line) and past and projected number of civilian fire-related **injuries** per 100,000 residents (red line).

The blue line (fire deaths/100,000) is projected to decrease slightly between FY10 and FY12 due to initiatives and programs described below under "Contributing Factors" and "What We Propose to do to Improve Performance." Absent the initiatives and programs described below, the projected number of deaths would be considerably higher.

The red line (fire-related injuries) is projected to decrease slightly each year between FY10 and FY12. The decrease reflects initiatives and programs described below under "Contributing Factors" and "What We Propose to do to Improve Performance." Absent these initiatives and programs, the projected number of civilian fire-related injuries would be higher.

3 – STORY BEHIND THE PERFORMANCE

Many factors contribute or restrict the ability of MCFRS to prevent civilian fire casualties (i.e., deaths and injuries). These factors are presented below in order of priority.

RESTRICTING FACTORS

FACT: Most fire deaths in Montgomery County are caused by smoking, and nearly 50% of fire deaths from 2003-2009 have involved residents 65 years and older.

a. **Residents' Behavior**: Behaviors exhibited by residents is a significant factor in residential fires resulting in casualties. Unsafe house-keeping practices (e.g., storing combustibles too close to heat sources) and unsafe daily practices (e.g., smoking in bed; unattended stoves) exhibited by some residents cause many fires that are preventable. Improper behavior by some residents during fires, such as attempting to fight the fire instead of evacuating or re-entering the burning residence after evacuating, has led to fire casualties as well.

b. **Demographic factors**:

- **Age**: Seniors (age 65 and above) and young children (age 5 and under) have the highest rates of injury and death in residential fires in Montgomery County as well as the State and nation. Alertness, mobility, and decision-making abilities are limitations associated with these age groups.

- **Socio-economic level**: Residents having lower household incomes are much more likely to become injured or killed in a residential fire than residents having higher household incomes.

- **Race/Ethnicity**: Race and ethnicity have a major bearing on residential fire deaths. Persons of certain races and ethnic groups are more likely to be killed in residential fires than others, based upon historical statistics.

c. **Lack of functioning smoke alarms**: Despite County and State laws requiring smoke alarms in residences, some residences lack these life-saving devices while others have smoke alarms, but they are non-functional due to lack of batteries, dead batteries, or age/condition of the smoke alarm itself.

d. **Smoking**: Careless use and disposal of smoking materials (i.e., cigarettes and cigars) has long been the primary cause of residential fire deaths in Montgomery County. In most cases, lit smoking materials come in contact with combustible furniture or clothing when smokers fall asleep and/or are incapacitated due to use of alcohol, medications, or other substances. Improper disposal of smoking materials is a less frequent cause of fires resulting in civilian casualties.

e. **Lack of sprinklers**: Residential high-rises and mid-rises, garden apartments, townhouses, and single-family homes pre-dating sprinkler laws present a significant risk to occupants. Without sprinkler protection, the chance of residents being injured or killed during a serious fire is fairly high, more so if smoke alarms are not present or not functioning to provide early warning.

CONTRIBUTING FACTORS

a. **Community outreach**: MCFRS has a robust community outreach program to educate the public about fire prevention, fire safety, and risk reduction. Elements of the program are targeted at high risk groups such as seniors, young children, and low-income residents. A County-sponsored task force produced a report in 2008 that identified critical areas of focus to improve fire safety for seniors and reduce the high incidence of fatal fires involving seniors over the past five years. MCFRS received an award from the National Fire Protection Association and a $5,000 grant for a program focused on fire safety awareness for family members and care takers of senior citizens.

b. **Sprinklers**: See item "b" under Contributing Factors in Performance Measure #1.

c. **Flammability standards for cigarettes**: Maryland is one of 30 states with a law in effect requiring that cigarettes sold within the State must be of the design known as "fire safe" cigarettes. The technology uses internal bands of thick paper spaced at about half-inch intervals that serve to stop the combustion process unless the smoker draws upon the cigarette to provide sufficient oxygen to keep it burning. A carelessly discarded or dropped cigarette of this design is more likely to burn itself out, presumably before igniting nearby combustibles. New York State was the first state to require flammability standards for cigarettes and since has observed a reduction in their annual fire deaths by approximately 50%.

WHAT WE PROPOSE TO DO TO IMPROVE PERFORMANCE

To improve the MCFRS' ability to prevent residential fire deaths and injuries, the department plans to pursue the following actions, programs, and initiatives between FY10 and FY12.

a. **Community outreach**: Continue fire prevention and risk reduction educational programs focused on targeted populations (e.g., elderly and immigrant populations) as well as long-standing programs having a more general application. All members of the fire-rescue service have responsibility to reduce community risk. Improvements are being planned for logistics and coordination of the door-to-door outreach program to increase efficiency.

b. **Implementation of recommendations concerning senior citizen fire safety**: Emphasis will be placed on implementing recommendations of the Senior Citizen Fire Safety Task Force. A number of projects have begun to raise awareness among people who provide direct service and support in senior's homes to identify people who may be at a greater risk and may need assistance installing smoke alarms or reducing risk in other ways.

Sprinkler retrofitting: See item "f" of "What We Propose to do to Improve Performance" in Headline Measure #1.

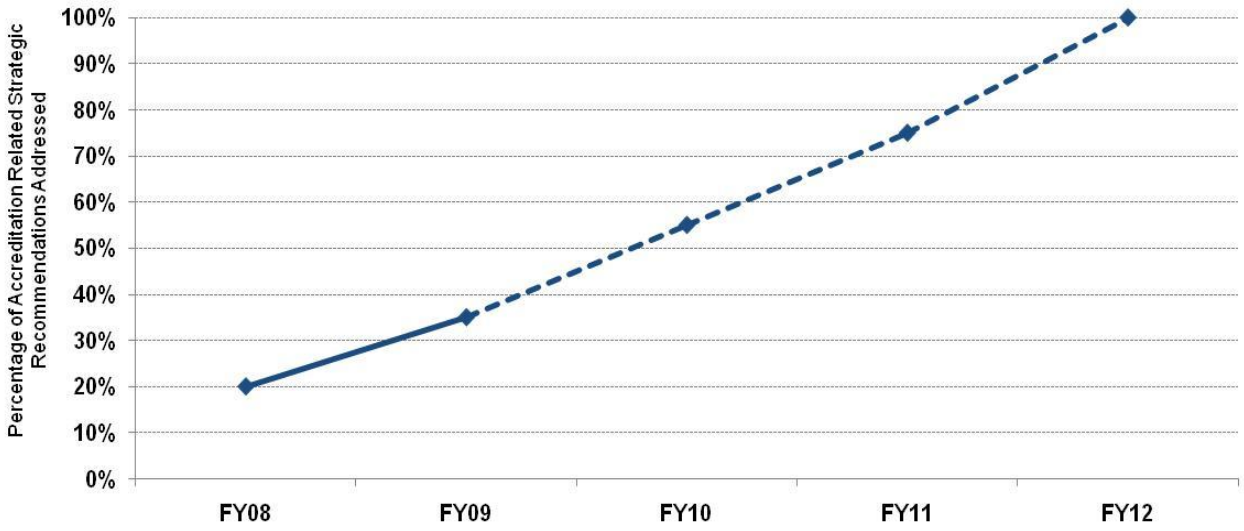
MCFRS HEADLINE PERFORMANCE MEASURE #4

PERCENTAGE OF STRATEGIC RECOMMENDATIONS ADDRESSED CONCERNING ACCREDIATION FOLLOW-UP REQUIREMENTS

1 – CONTRIBUTION TO MONTGOMERY RESULTS

- **Safe Streets and Secure Neighborhoods**

2 – **PERFORMANCE**



3 – STORY BEHIND THE PERFORMANCE

In April 2007, MCFRS was evaluated by a Peer Assessment Team from the Commission for Fire Accreditation International (CFAI) which determined that MCFRS met CFAI's core competency criteria. Based upon that assessment, CFAI awarded accreditation status to MCFRS in August 2007 at their annual conference. As of November 2009, MCFRS is one of only two accredited fire departments in Maryland, one of 133 accredited departments worldwide, and the largest combined (i.e., career and volunteer) department to be accredited.

In addition to receiving accreditation status, MCFRS was given a list of recommended follow-up actions (i.e., "strategic recommendations") by the CFAI Peer Assessment Team addressing several areas needing improvement. Over each of the next two years, MCFRS must submit a progress report to CFAI in July describing progress made in these areas. A favorable review by the CFAI Board each year will allow MCFRS to maintain its accreditation status. After five years (i.e., 2012) of its initial accreditation, MCFRS must reapply for accreditation and begin the process once again to become re-accredited.

WHAT WE PROPOSE TO DO TO IMPROVE PERFORMANCE

To maintain its accreditation, MCFRS must address the "strategic recommendations" provided by the CFAI Peer Assessment Team. The list below summarizes and consolidates these recommendations. MCFRS must show progress in its annual compliance report to the CFAI Board of Directors to maintain its accreditation status. The plan is to continue addressing annually about 20% of the overall workload associated with acting upon the CFAI's strategic recommendations.

- Upgrading of the department's data management system to match the complexities and demands of the department
- Redefining current service level objectives presented in the "MCFRS Standards of Cover" document submitted to the Peer Assessment Team in 2007
- Developing a clear and well-defined plan to overcome the sizeable gap between the current service level objectives and the response time goals stated in the 2005-2015 MCFRS Master Plan
- Analyzing the effectiveness of call processing procedures in use at the ECC
- Conducting a detailed feasibility study of the current tiered response for emergency medical calls
- Conducting a detailed analysis to measure patient outcomes from the two different ALS service levels (i.e., deployment of EMT-Is and EMT-Ps interchangeably) to ensure the department's desired level of service is provided
- Measuring performance as a means of achieving stated service level goals
- Updating policies and procedures for origin and cause investigations that are commensurate with accepted fire investigation standards
- Conducting training on how to properly value and record fire loss data, and developing a mechanism of quality assurance for the valuation and recording of this data

MCFRS HEADLINE PERFORMANCE MEASURE #5

Percent of Montgomery County Residents surveyed who Rate MCFRS' Injury and Fire Prevention Education Services Effective

- **SUPPORTING MEASURE #5.1**

Number of fire incidents where smoke detectors were not operational or not present

1 – CONTRIBUTION TO MONTGOMERY RESULTS

- **Safe Streets and Secure Neighborhoods**

2 – PERFORMANCE

Not available. Measure remains under development, and data collection has only begun.

3 – STORY BEHIND THE PERFORMANCE

Fire safety in Montgomery County is dependent upon the fire safety knowledge, awareness, and responsibility of its residents. The fire and rescue service should strive and encourage within its means to improve this knowledge, awareness and responsibility. In general, the greatest fire risk is to residents in their homes; therefore these occupancies and their residents must be the highest targetted focus. Many factors contribute to improve or restrict the ability of MCFRS to increase the knowledge and awareness of residents. These factors are presented below.

RESTRICTING FACTORS

a. **Insufficient staff to deliver and coordinate comprehensive programs:** MCFRS lacks adequate staff dedicated to fire safety education and outreach. One nationally recognized fire protection analysis and consulting firm (i.e., Tri Data) recommends a minimum of one fire and life safety educator per 100,000 residents. Considering this benchmark, MCFRS - with two positions attributed to fire and life safety education - would be considered at 20% strength. Countries who have achieved improved fire and life safety records that resulted in lower numbers of deaths and dollar loss

accomplished this after having committed up to 10% (approximately 100 staff) of their total firefighting force to dedicated fire and life safety functions.

b. **Insufficient funding for materials and resources:** Considering the number of residents that need to be reached through our door-to-door, event-based, and service partner programs, MCFRS falls short of materials and other resources. Past focused programs required the department to seek donations of materials to be able to meet demand. Donations have declined in the recent economic downturn.

c. **Demographic Influences - Seniors:** Montgomery County experienced an increase in the number of fire deaths to senior citizens between 2003 and 2008 with fourteen of fifteen overall deaths during those years attributed to residents over 65 years. Aggressive attention to the risk has reduced the number of deaths to less than one death per 100,000 population. There is evidence that outreach education works to reduce risk, but it must be focused and sustained. The trend and projection for significant increases in people age 65 and older offers the potential for increased risk to continue. People over the age of 65 experience a fire death rate nearly twice the national average for all ages; over 75 years of age the fire death rate jumps to three times the national average for all ages.

d. Demographic Influences – Language Proficiency: Montgomery County is a diverse community, and growth of residents with limited English proficiency can have an effect on the ability for the County to provide critical safety information to the entire population. Focused programs that cater to at-risk populations, using a more functional all–purpose outreach approach involving people having language ability that matches the community, may have an effective impact.

e. Demographic Influences – Crowding: Migration to the Washington Metropolitan Region by people from other parts of the world has put a strain on available affordable housing. An increasing number of new residents resort to living in homes that were originally intended to house one family. As in item "c" above, these are also people with little or no English proficiency and may not be aware of acceptable safe practices for homes. Montgomery County experienced a multi-fatality fire five years ago that was the result of more then one family living in the home. It was set up with a second kitchen that was not properly installed or inspected, resulting in the deaths of the entire family. At least one near-miss fire in crowded homes occurs every year within the County, and it is a concern that MCFRS will continue to be aware of and try to prevent it.

f. **Opportunities to provide safety education in schools is limited**: A program to provide safety education in school – "Risk Watch" - has not met our full expectations. It has been under-utilized by the schools, as it has not been a required curriculum and local principals and teachers have the option to accept or reject the program. MCFRS feels this is one very important area of education to provide in the early education environment because it forms a good early base of knowledge. Schools are under pressure to achieve higher scores in academic testing and are concerned if they are

not putting all effort and resources into this priority. This situation negatively impacts their willingness to include Risk Watch in their curriculums.

g. **Complacency to the risk of fire**: People in general are complacent to the risk of fire. Most believe that fires happen to other people, not themselves.

h. **Lack of awareness of home fire risk:** Residents, for the most part, are not aware of the risk of fire in their homes. When combined with the concern identified above in item "c," homes continue to be the highest fire risk occupancy in the country and in Montgomery County. Most residents are not aware of the ferocious speed that fire can develop and limit their safe escape. They are unaware of actions they can take to reduce risk and improve survival if fires or other dangerous conditions occur in their homes.

i. **Certain groups of people are more inclined to experience a fire:** Evidence indicates that some people are more inclined to experience fires then others. There are a disproportionate number of fires in the United States resulting in deaths, injuries, and monetary loss to senior citizens, the poor, African Americans, and Native Americans.

j. **English proficiency and literacy:** People need to be able to read and understand information that is presented to them in the many available materials and media.

k. **Residents are not open to home visits by firefighters:** MCFRS finds that on our door-to-door safety program, personnel are only admitted to a small percentage of homes and not usually more than three out of ten. Many residents do not answer the door and those who do are often reluctant to participate in allowing their smoke alarm to be checked. This type of program has been shown throughout the world to be a key program in increasing operable smoke alarms and offering advice and training on home hazards and fire escape planning for residents.

CONTRIBUTING FACTORS

a. Residential sprinkler requirements: All new homes constructed in Montgomery County since January 1, 2004 have been required to have residential fire sprinkler systems. They are a resident's best defense against a serious fire because sprinklers confine fires, save lives, and reduce property damage. Residential sprinklers are designed to operate in the early stages of a fire; thus reducing the chance that a room will flash over.

b. Smoke alarms: Smoke alarms have been required by County law since 1978. Later versions of codes have enhanced the way smoke alarms work by requiring they interact with each other, be hard wired, have a battery back up, and be located on each level of the home and in every room used for sleeping.

c. Risk Watch: Montgomery County participates in the NFPA "Risk Watch" program that serves as a school and child activity-based all-hazards curriculum. Unfortunately in Montgomery County, less then half of the elementary schools participate in the program due to pressure to achieve higher test scores. Future marketing of the program should seek the potential to let the curriculum be interwoven into normal lessons, so that both academic and safety criteria can be met.

d. Safety in Our Neighborhood: During FY09**,** MCFRS re-established the innovative "Safety in Our Neighborhood" (SION) program involving direct interface with County residents. The program has an all-hazards approach that includes a method for eliminating injuries of all types in the home. The SION program took firefighters to homes following extensive local advertising to ensure people were aware they would be coming. Firefighters have found an unacceptable number of missing, non-working, and/or obsolete smoke alarms and have assisted residents in improving their home environment to reduce injuries, deaths, and property loss.

WHAT WE PROPOSE TO DO TO IMPROVE PERFORMANCE

To move toward meeting the departmental goal of achieving survey results where residents rate the department's education efforts as effective, MCFRS will increase the fire safety knowledge and awareness of County residents to a defined, acceptable level appropriate to risks for the targeted residents by:

- Using the existing Safety in Our Neighborhood program of door-to-door visits
- Increasing marketing for the door-to-door visits to include news stories, social networking, and more scheduled and focused neighborhood visits
- Using the MCFRS web sites and public service announcements to make information available
- Training and working directly with social care-givers who regularly interface with people of high risk and supporting them with materials and technical support
- Using volunteers (e.g., MCFRS Mobile Volunteer Corps, Community Emergency Response Teams) to deliver educational and outreach programs
- Focusing efforts at educating family and community care-givers for those at risk
- Employing benchmark efforts proven successful in Europe and Pacific Rim nations to increase knowledge and awareness of community, home, and personal risk

MCFRS HEADLINE PERFORMANCE MEASURE #6

Pre-Hospital Cardiac Care

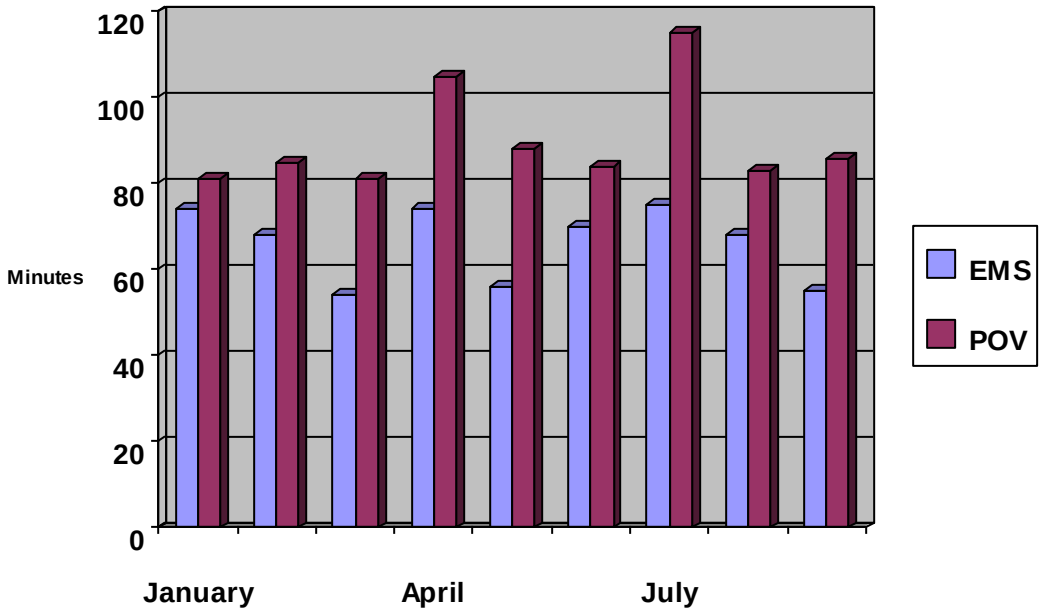
1 – CONTRIBUTION TO MONTGOMERY RESULTS

- **Safe Streets and Secure Neighborhoods**

2 – PERFORMANCE

Shady Grove Adventist Hospital PCI Comparison

Average Door to Balloon Time



Note: The only performance data (above) available at this time to present graphically compares times for STEMI incidents involving MCFRS EMS intervention versus STEMI incidents where patients were delivered to a cardiac care specialty center via privately-owned vehicles (POVs) without MCFRS intervention.

MCFRS Performance Data (January-September 2009)

- MCFRS EMS personnel activated the ST-segment elevation myocardial infarction (STEMI) response system 36 times from January – September 2009.
- Only six of the EMS activations did not progress to Percutaneous Coronary Intervention (PCI) completion. Disqualifying factors for the six activations ranged from Do-Not-Resuscitate (DNR) patients to Coronary Artery By-Pass Graft criteria.
- The average door-to-balloon time for STEMI patients with MCFRS EMS intervention was **67 minutes**, **well under the desired 90-minute goal**.
- When the STEMI patient arrived by personally-owned vehicle, the average door-to-balloon time was 22 minutes greater.
- Excluded from the analysis were seven PCI activations from within Shady Grove Adventist Hospital. Also excluded were Germantown Emergency Center (GEC) patients due to the necessary transfer from that facility to a hospital having a cardiac catheterization lab.

3 – STORY BEHIND THE PERFORMANCE

Indicator: Percentage of EMS-identified ST-segment elevation myocardial infarction (STEMI) patients receiving balloon catheterization (in a cardiac catheterization lab) within 90 minutes for 90% of STEMI incidents.

This performance measure quantifies the clinical skills that the MCFRS utilizes to treat pre-hospital cardiac patients. The basis for this assessment is the national best practices model for EMS systems as published in the April 2008 National Association of EMS Physicians Journal, *Pre-hospital Emergency Care*.

The MCFRS provides a tiered level of response for pre-hospital emergency care. Our customer satisfaction levels based on post-incident mailings have traditionally been very high. The current challenge for our EMS system is to quantify in specific, focused terms the treatments that improve cardiac patient outcome.

Considering available technology, current statistical accounts in medical journals, and emerging cardiac management, the MCFRS is a model pre-hospital cardiac care system. The MCFRS has in place the components to provide state-of-the-art pre-hospital cardiac care at the local level. Additionally, the Maryland Institute of Emergency Medical Services Systems (MIEMSS) has provided State direction in the designation of cardiac treatment centers, including five in Montgomery County. This combination of EMS direction, experience, and knowledge, partnered with a local network of cardiac care specialty centers, places the MCFRS in a solid position to provide fast and effective cardiac care to the residents of Montgomery County.

<u>Standard for Measurement</u>

Door-to-balloon time (see explanation below) is a measurement in emergency cardiac care, specifically in the treatment of ST-segment elevation myocardial infarction (STEMI). The interval starts with the patient's arrival in the emergency department and ends when a catheter guidewire crosses the culprit lesion in the cardiac catheterization lab. Because of the adage that "time is muscle" (meaning that delays in treating a myocardial infarction increase the likelihood and amount of cardiac muscle damage due to localized hypoxia), American College of Cardiology/American Heart Association guidelines recommend a door-to-balloon interval of no more than 90 minutes. Currently, fewer than half of STEMI patients nationwide receive reperfusion with primary percutaneous coronary intervention-PCI (see below) within the guideline-recommended timeframe.

Percutaneous Coronary Intervention

Percutaneous coronary intervention (PCI) encompasses a variety of procedures used to treat patients with diseased arteries of the heart. One example is chest pain caused by a build-up of fats, cholesterol, and other substances from the blood (i.e., "plaque") that can reduce blood flow to a near trickle. Another example is a heart attack caused by a large blood clot that completely blocks the artery.

Typically, PCI is performed by threading a slender balloon-tipped tube – a catheter – from an artery in the groin to a trouble spot in an artery of the heart (i.e., percutaneous transluminal coronary angioplasty – PTCA, or balloon angioplasty). The balloon is then inflated, compressing the plaque and dilating (widening) the narrowed coronary artery so that blood can flow more easily. This is often accompanied by inserting an expandable metal stent - a wire mesh tube used to prop open arteries following PTCA.

RESTRICTING FACTORS

- Every EMS call is different; standard, repeatable calls are hard to guarantee
- The ability to measure these skills is a manual process
- The indicator skills rely on the provider to document actions in precise terms

CONTRIBUTING FACTORS

- MCFRS is the lead agency for implementation of the STEMI process.
- MCFRS has partnerships with the six in-county emergency departments to facilitate communication focused on cardiac issues.
- MCFRS has in place a training program, hardware, and experience in delivering 12-lead interpretation.

- MCFRS has initiated an electronic patient care reporting system (ePCR) that will allow for efficient, effective, and focused data collection for STEMI events.

WHAT WE PROPOSE TO DO TO IMPROVE PERFORMANCE

- The MCFRS EMS Section will continue gathering data to demonstrate utilization of these critical cardiac skills and the impact to the community.

- The MCFRS will gather patient outcome data to demonstrate the effectiveness of these cardiac skills.

- The MCFRS will analyze this data and make adjustments in the Emergency Medical Dispatch (EMD) process to further focus on deployment of best resources.

APPENDIX A

BUDGET

Four-person ALS Staffing Plan

Continued implementation of the four-person ALS staffing plan, with Phase 3A planned for FY10 and Phase 3B for FY12. Phase 3A will provide a fourth person on 3 engines, involving 12 work years. Phase 3B will provide a fourth person on five additional engines, involving 22.5 work years.

- Phase 3A (FY10) - $264,000 one-time training and gear costs for 12 recruits, plus $420,000 for their salaries while in recruit school. Full-year salaries for these 12 personnel following recruit school (totaling $900,000 annually) will be covered by the federal SAFER grant.

- Phase 3B (FY12) - $2,182,00 for 22.5 recruits, including salaries and one-time training and gear costs. If MCFRS is successful in obtaining additional SAFER grant awards, then a portion of the salary-related costs would be covered.

Germantown-Milestone Fire Station 34

It is anticipated that Station 34 will open during the Spring of 2010. The CIP and operating costs below are associated with this new station between FY10 and FY12. SAFER grant moneys will fund a portion of these costs.

- FY10 CIP Costs: $1,416,000
- FY10 Operating Costs: $649,250 for salaries (April – June, following station opening), plus $594,000 one-time costs for training and gear for 27 recruits and $945,000 for their salaries while in recruit school
- FY11 Operating Costs: $2,682,000 (27 work years)
- FY12 Operating Costs: $2,753,000 (27 work years)

CAD and Station Alerting System Replacement

This would be a multi-department project involving all public safety departments.

CIP Costs (FY10-12): TBD – costs currently being calculated
Operating Costs (FY12): TBD - costs currently being calculated

Station Activity Tracking System

Operating Costs (FY12): $160,000 for IT position

Senior Citizen Fire Safety Program

Operating Costs (FY12): $100,000 for Program Manager I position

Public Education Materials

Operating Costs: $50,000 for fire safety/injury prevention literature (handouts), smoke alarms and batteries, and related materials

APPENDIX B

IMPLEMENTATION

MEASURE #1 – Confining Residential Fires to Room of Origin

KEY STRATEGIES/ACTIONS

- Continued implementation of four-person staffing plan:
  - Phase 3A – 4th person for 3 engines funded mostly by a SAFER grant – FY10
  - Phase 3B – 4th person for 5 engines - FY12 [per availability of funds]
- Continue studying and implementing alternatives for improving response time – FY10-12
- Continue advocating sprinkler retrofitting of residential mid-rises and high-rises – FY10-12
- Develop a plan for improving rural water supply sources – FY10-12

MEASURE #2 – Response Time to ALS Incidents and Structure Fires

KEY STRATEGIES/ACTIONS

- Continued implementation of four-person staffing plan:
  - Phase 3A – 4th person for 3 engines funded by SAFER grant – FY10
  - Phase 3B – 4th person for 5 engines - FY12 [per availability of funds]
- Continue studying and implementing alternatives for improving time taken for call-taking/processing and dispatch – FY10-12
- Continue implementation of resource allocation initiatives that will result in reduced travel time – FY10-12

MEASURE #3 – Residential Fire Deaths and Injuries per 100,000 Residents

KEY STRATEGIES/ACTIONS

- Continue implementation of recommendations in Senior Citizens Fire Safety Task Force Report – FY10-12
- Continue fire prevention and risk reduction programs focused on targeted populations as well as those programs focused on the County's population at large – FY10-12

MEASURE #4 – Percentage of Strategic Recommendations Addressed Concerning Accreditation Follow-up Requirements

KEY STRATEGIES/ACTIONS

Continue five-year initiative to address strategic recommendations provided by CFAI Peer Assessment Team in April 2007. The plan is to address annually about 20% of the overall workload associated with acting upon the strategic recommendations. Actions to be taken FY10-12

MEASURE #5 - Percent of Montgomery County Residents Surveyed who Rate MCFRS' Injury and Fire Prevention Education Services Effective

KEY STRATEGIES/ACTIONS

MCFRS will increase the fire safety knowledge and awareness of County residents to a defined, acceptable level appropriate to risks for the targeted residents by:

- Using the existing Safety in Our Neighborhood program of door-to-door visits
- Increasing marketing for the door-to-door visits to include news stories, social networking, and more scheduled and focused neighborhood visits.
- Using the MCFRS web sites and public service announcements to make information available
- Training and working directly with social care-givers who regularly interface with people of high risk and supporting them with materials and technical support
- Using volunteers (e.g., MCFRS Mobile Volunteer Corps, Community Emergency Response Teams) to deliver educational and outreach programs
- Focusing efforts at educating family and community care-givers for those at risk
- Employing benchmark efforts proven successful in Europe and Pacific Rim nations to increase knowledge/awareness of community, home, and personal risk

MEASURE #6 – Pre-Hospital Cardiac Care

KEY STRATEGIES/ACTIONS

- Data gathering to demonstrate utilization of critical cardiac skills and the impact to the community.

- Gathering of patient outcome data to demonstrate the effectiveness of cardiac skills of MCFRS' EMS providers.

- Analysis of the above data, and making adjustments in the Emergency Medical Dispatch (EMD) process to further focus on deployment of best resources.

APPENDIX C

DATA DEVELOPMENT AGENDA

Measure #1

Improve completeness and accuracy of data reported on residential fires confined to room of origin

Measure #2

Development of fractile response time data in accordance with accreditation compliance reporting requirements

Measure #3

Improve completeness and accuracy of data reported concerning civilian fire injuries

Measure #4

No data development required for this measure

Measure #5

Collection of data on low-income residents' opinions of the effectiveness of the MCFRS' fire and injury prevention education program. [This measure remains under development]

Measure #6

Improve completeness and accuracy of data reported, so that data concerning STEMI patients can be reported for all five cardiac catheterization labs in Montgomery County

ADDENDUM
RESPONSIVE AND SUSTAINABLE LEADERSHIP

Responsive and Sustainable Leadership has been the cornerstone of the County Executive's vision for Montgomery County Government. To advance this vision, the following overarching goals for all County departments have been identified:

1. COLLABORATIONS AND PARTNERSHIPS

ACCOMPLISHMENTS/EXPECTED RESULTS

The Montgomery County Fire and Rescue Service (MCFRS) prides itself on reaching out to our partners in the community and to fellow resource providers including federal, State and County agencies. MCFRS continues to meet with our internal and external partners on pending issues and more recently on a quarterly basis to collaborate on-going items that apply to MCFRS. The Fire Chief encourages his personnel to be progressive in working with our partners to provide the finest quality and efficient service to the citizens of our community. Our mission to serve the public and private sectors of the community could not occur without the outstanding cooperation of the entities listed below:

Fire-Rescue Departments and Organizations
Montgomery County Local Fire and Rescue Departments (LFRDs)
Montgomery County Volunteer Fire and Rescue Association (MCVFRA)
International Association of Firefighters, Local 1664 (IAFF-Local 1664)
Federal Fire Departments in Montgomery County
District of Columbia Fire Department
Fairfax County Fire Department
Prince William County Fire Department
Loudoun County Fire Department
Prince Georges County Fire Department
Frederick County Fire Department
Howard County Fire Department
Carroll County Fire Department
International Association of Fire Chiefs
International Association of Black Professional Fire Fighters
National Association of Hispanic Fire Fighters
National Fallen Firefighters Foundation
Women in the Fire Service, Inc.
Maryland Fire Chief's Association
Maryland State Fireman's Association

Montgomery County Departments, Agencies, Councils and Organizations
Police Department
Department of Permitting Services
Department of Economic Development
Department of Environmental Protection
Office of Human Resources
County Council Members and Staff
Office of Legislative Oversight

Local Governments within County and Region
Chevy Chase Village
City of Gaithersburg
City of Rockville
City of Takoma Park
District of Columbia Government
DC Department of Homeland Security

Health Care Organizations and Facilities
Montgomery County hospitals and nursing homes
Adventist Health Care
Walter Reed Army Hospital
National Naval Medical Center
District of Columbia hospitals

Area Utilities, Commissions and Authorities
Potomac Electric Power Company
Washington Metropolitan Transit Authority
Washington Suburban Sanitary Commission

Regional Organizations
Metropolitan Washington Council of Governments
National Capital Region Incident Management Team
Maryland-National Capital Park and Planning Commission
Naval District of Washington

State Departments and Agencies
Maryland State Fire Marshall's Office
Maryland Institute for Emergency Medical Services System
Maryland Emergency Management Agency
Maryland Occupational Health and Safety Administration
Maryland Natural Resources Police
Maryland State Police
Maryland State Highway Administration
Maryland Department of Transportation
Maryland Department of Environmental Protection

Maryland Emergency Numbers Board
Maryland State House of Delegates

Federal Departments and Agencies
Federal Homeland Security Department:

- United State Fire Administration
- Federal Emergency Management Agency

Federal Bureau of Investigation
Bureau of Alcohol, Tobacco, Firearms and Explosives
Occupational Safety and Health Administration
United States Park Police
Department of the Interior - Park Rangers
Consumer Product Safety Commission
National Institute of Standards and Technology
National Institutes of Health
National Institute for Occupational Safety and Health
Federal Communications Commission
Naval Surface Weapons Warfare Center at Carderock

Private Sector Organizations
National Fire Sprinkler Association
International Code Council
National Capitol Building Industry Association
Home Safety Council
National Broadcasting Company – "Today Show"
American Broadcasting Company – "Good Morning America"
Local news organizations

In addition, the Fire Marshal's office routinely partners with other agencies to improve final outcomes of activities as follows:

- Fire and Explosives Investigations has worked routinely with the Montgomery County Police Gun Unit to successfully foil, apprehend, arrest and bring to trial potential domestic terrorists. Other agencies involved in these activities include the Federal Bureau of Investigation; Bureau of Alcohol, Tobacco, Firearms and Explosives; and U.S. Secret Service.

- Fire Code Enforcement successfully enlisted the assistance of the County's Department of Health and Human Services and Department of Liquor Control to implement a late night inspection program of bars and nightclubs in the County. Numerous life safety, health, and liquor control violations were discovered and corrective actions were begun.

- Fire Code Enforcement, Engineering Section has taken a proactive stance in addressing fire department access problems in the northern County. Partnerships have been established with the County's Department of Permitting Services and

Department of Transportation, and Maryland-National Capital Park and Planning Commission in this effort to ensure adequate emergency access while at the same time staying within the boundaries of developmental requirements of the Montgomery County Planning Board. Staff meets about once a week with community groups to explain the requirements and elicit input.

- Fire Code Enforcement has partnered with the American Fire Alarm Association and American Fire Sprinkler Association to implement a licensing requirement for service providers. Licensing requirements are contained in Montgomery County Executive Regulation 6-06. Licensing ensures that providers meet certain minimum proficiency levels, business owners receive code-compliant service, and that their fire protection systems work as intended and decrease potential business losses from fire.

- Fire Code Enforcement, Engineering Section partnered with the National Institutes of Standards & Technology and the National Fire Academy to develop fire scene documentation and modeling to better evaluate and predict fire behavior in structures. These efforts have placed Montgomery County on the cutting edge of national efforts. Results have implications for national building and fire code development and post-event investigations.

The MCFRS Volunteer Services Division also partners with other agencies to improve final outcomes as follows:

- The Division of Volunteer Services Fire Corps Program has developed an external partnership with the Boy Scouts of America (BSA) to expand the department's efforts in recruiting for new volunteers as well as career applicants for both current and future personnel needs of MCFRS. This partnership has also allowed for a force expander during the fire prevention season typically in October and November each year by combining the BSA "Scouting for Food" with the MCFRS "Put a Finger on It" smoke alarm campaign by having the BSA - when dropping off bags for local food banks at Montgomery County residences - provide important smoke alarm information to each residence they visit. Last Fall, they delivered this valuable life saving information to approximately 35,000 residents.

- MCFRS Division of Volunteer Services has collaborated with the Montgomery County Volunteer Fire and Rescue Association to increase the number of trained volunteer fire and rescue volunteers that serve in the Local Fire and Rescue Departments (LFRDs). This has allowed MCFRS to better manage overtime costs associated with staffing. Three LFRDs were recently instrumental in cost savings to the MCFRS by changing their volunteer staffing profile to control cost associated with overtime.

2. INNOVATIONS

ACCOMPLISHMENTS/EXPECTED RESULTS

- The Operations Division has employed several innovations to improve effectiveness and efficiency:

    - ALS deployment model – implemented the "1 and 1" ALS deployment model in conjunction with the four person staffing strategy, whereby medic units are staffed by one paramedic and one EMT-B instead of two paramedics. The second paramedic is assigned as the fourth person on a suppression unit (i.e., 21 engines and one aerial unit thus far) as a firefighter-paramedic which creates a four-person suppression unit that can also serve as an ALS first-responder apparatus (AFRA). The result is expansion of MCFRS ALS capacity which improves ALS response time and allows paramedics to integrate into fire suppression, while increasing staffing on suppression units to the level recommended in NFPA Standard 1710.

    - Electronic Patient Care Reporting (ePCR) system – ePCR is a State-mandated system being implemented in the field by MCFRS personnel during FY10. ePCR replaces a paper-based reporting system by allowing EMS providers to enter patient data into a handheld device during incidents which improves efficiency and leads to improved patient care.

    - Compressed-air foam – new pumper fleet is equipped with compressed-air foam systems that provide firefighters the capability to extinguish fires with Class A Foam which has the dual capability of cooling and smothering fires.

    - New MCFRS aerial towers equipped with "all-steer" technology to improve maneuverability on narrow streets and around tight corners

    - New ladder trucks (tractor-drawn aerials) are equipped with extrication equipment; thus expanding the services provided by this type of apparatus

    - All new apparatus is uniformly equipped; therefore firefighters assigned to any fire station are familiar with the type and layout of all equipment on apparatus

- EMS Simulation Lab – An emergency medical services (EMS) simulation lab located at the Fire-Rescue Training Academy (FRTA) allows for the simulation of actual patient encounters in an adult's bedroom and an infant's bedroom. The FRTA has three high-fidelity adult simulators ("Sim-Man") and one infant ("Sim-Baby") simulator. All aspects and areas of the patient encounter areas are video and audio recordable in a fully digital process. The ability to program the simulators to mimic and realistically reproduce real-life patient situations allow instructors to accurately evaluate students and current EMS providers in all aspects of basic and advanced life support emergencies.

- The Division of Volunteer Services and DTS have continued the evolution and improvement of the Personnel Information System (PIMS) to include the Station Staffing Tracker (SST). The SST has allowed MCFRS to monitor the compliance of standby programs at the Local Fire and Rescue Departments to make staffing decisions that were needed to manage overtime and personnel costs.

- The Fire Marshal's Office routinely scans off-the-shelf and emerging technologies to identify, acquire, and implement solutions that improve performance as follows:

    - Fire Code Enforcement implemented an off-the-shelf electronic reporting program that significantly reduced inspection documentation time while providing a usable data base to identify internal business trends and customer violation patterns. Violation patterns can be used to tailor community outreach programs and focus corrective actions due to systems failures such as pipe calcification.

    - Fire Code Enforcement, Engineering Section acquired an electronic scanner ("Deltasphere") that accurately captures and preserves fire scenes. The scanner creates a several million data point "cloud" representative of actual conditions in approximately 15 minutes, requiring only one person to set it up. Previous technologies required several hours, at least two personnel, and provided - at most - a couple hundred data points.

    - Fire Code Enforcement, Engineering Section has acquired a cone calorimeter to identify heat release characteristics of materials. Montgomery County is the only local jurisdiction in the country to possess the device and expertise to utilize it. Along with a mass-spectrometer/gas chromatograph, evidence seized on the scene of fires can be evaluated within hours. Previous process required six or more months and the use of an out-of-state lab. Fire investigators will be able to test origin and cause hypothesis while still on scene, resulting in quicker, less costly, and more accurate case closures.

    - Fire and Explosives Investigations acquired, through grant monies, two bomb disposal trailers and two additional robots. Intervention actions can now be implemented quickly and more safely without having to depend on response from the State of Maryland or U.S. military. These devices will reduce mitigation time and disruption to the community and will improve bomb technician safety.

3. EFFECTIVE AND PRODUCTIVE USE OF THE WORKFORCE

ACCOMPLISHMENTS/EXPECTED RESULTS

- The Division of Volunteer Services and DTS have continued the evolution and improvement of the Personnel Information System (PIMS) to include the Station Staffing Tracker (SST). The SST has allowed MCFRS to monitor the compliance

of standby programs at the Local Fire and Rescue Departments to make staffing decisions that were needed to manage overtime and personnel costs.

- The Division of Volunteer Services has teamed with the Department of Finance and DTS to work through the process of automating the Length of Service Award Program (LOSAP) payment schedule for calculating data, information transfers, and auditing of monthly LOSAP payments for recipients of this benefit. This innovation has reduced the amount of time required to complete this process by approximately 16 hours.

- The Division of Volunteer Services has taken over the responsibility of managing CERT (Community Emergency Response Team). This team is modeled after the National Citizen Corps model. The Community Emergency Response Team (CERT) Program educates residents about disaster preparedness for hazards that may impact their community and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. Using the training learned in the classroom and during exercises, CERT members can assist others in their neighborhood or workplace following an event when professional responders are not immediately available to help. CERT members also are encouraged to support emergency response agencies by taking a more active role in emergency preparedness projects in their community. CERT was utilized in three major operations during the past year to include:

    - Inauguration Day - where they performed at all METRO Stations in the County and were teamed with police and fire personnel to assist citizens with directions, basic first-aid, and to serve as extra sets of eyes for any suspicious activity. These volunteers reduced the need for overtime to accomplish this task.

    - Tiger Woods AT&T Golf Classic Tournament - CERT was utilized by tournament officials to assist citizens who where in need of transportation due to heat or health-related issues to their cars or other areas on the grounds. This prevented EMS incidents involving attendees who could not cope with the elements. This reduced costs associated with staffing a special event in the County.

    - Montgomery County Agricultural Fair: CERT was utilized to assist with Public Safety Education at this event. CERT also provided staffing of the Office of Emergency Management's information center at the fair. This reduced the costs of providing valuable information to Fair attendees.

- CRRS will implement a paper and printing reduction process employing reuse of printed one side paper as well as increased use of imaging and electronic transfer of documents and document collaboration platforms such as the Commission on Fire Accreditation International's "SharePoint" application; thus reducing document hard copy distribution.

4. SUCCESSION PLANNING

ACCOMPLISHMENTS/EXPECTED RESULTS

- CRRS uses its managers and supervisors in such a way as to put them in position of acting to the level above on a regular basis. This provides opportunities for these managers to aspire to the next levels if they have the minimum education and training requirements

- CRRS encourages and provides opportunities for all staff to attend training that allows them the opportunity to apply for promotional exams or otherwise apply for jobs that would advance their careers.

5. INTERNAL CONTROLS AND RISK MANAGEMENT

ACCOMPLISHMENTS/EXPECTED RESULTS

- CRRS inspects all County buildings for fire and life safety requirements of County code. Several fire stations have been brought up to code for life safety compliance issues reducing labor concerns and increasing employee and visitor safety.

- MCFRS conducts home visits by fire companies to assist residents in assuring that smoke alarms are working and properly installed as well as to provide them specific training and practice in home fire escape planning. All areas of outreach and code enforcement increase fire safety code compliance which should provide benefit to firefighter and resident safety by reducing hazards and risk as well as insuring that fire protection systems function appropriately.

- CRRS worked closely with the Housing Opportunities Commission on a CIP project to retrofit with fire sprinklers systems existing high-rise residential buildings in which the County had specific interest. The buildings generally house vulnerable residents. This leads the way by the County to encourage privately-owned residential high-rises to retrofit with sprinklers as well. The County's Fire and Rescue Service Master Plan identifies the need to have all residential high-rise buildings retrofitted with fire sprinkler systems.

- MCFRS has an aggressive program for training drivers and evaluating risk associated with emergency vehicle collisions. MCFRS has implemented a number of critical innovations to reduce the occurrence of collisions to reduce the potential injury of employees and residents.

- The Fire Marshal's Office, Fire Code Enforcement Section began implementation of a fee-for-service business model in 2006. Some aspects of this business model pertaining to internal controls are listed below:

    - The fee for service business model for providing fire code enforcement services reduces the overall tax burden on the general population, focuses costs on the actual users of the service and has resulted in the matching of resources to service demands.

    - Heightened fire code enforcement activities improve business continuity, reduce community blight, and maintain the County's tax base. [National statistics indicate that the business failure rate is approximately 80% after a fire.]

    - Staff has worked with the Department of Finance and the MCFRS Budget Section to implement an automated accounts receivable platform and accounting reports in compliance with auditing requirements. Work efforts identified approximately $50,000 that had been routinely misdirected though internal processing errors.

6. ENVIRONMENTAL STEWARDSHIP

ACCOMPLISHMENTS/EXPECTED RESULTS

- LEED-certified Fire Stations – All new fire stations in the County are built to Leadership in Energy and Environmental Design (LEED) criteria and are LEED certifiable. The newest station, Germantown-Kingsview Station 22, is LEED certifiable as is Germantown-Milestone Station 34 currently under construction. These stations are designed and built to be **energy efficient and "green" to minimize their impact on the environment**.

- CRRS makes maximum use of digital communication technology to make date and reference information available to inspectors in remote work situations. In addition, digital photography and text message transmissions are used to ask other staff and the Engineering Section for opinions on how to approach a problem. This saves time for the inspector and reduces the need to drive back to the office in order to confer on hazardous situations; **thus saving fuel and reducing emissions**.

- CRRS initiated a program to file all documents as data-based image files. This **reduces the need for a paper copies**, storage for voluminous files, and makes documents associated with the history of a building for digital on line accessibility.

- CRRS transferred technology formerly used in surveying to assist in creating a digital file of building specifications for the creation of models. This allows us to perform forensic evaluation after a fire has occurred and builds a data base of conditions and science related to fire modeling. This data enhances information used to complete

performance-based code design and ultimate facilitates fire safety for unique buildings and conditions **for sustainable buildings and communities**.

- CRRS created a new County Executive regulation that provides a performance direction for fire apparatus access and water supply. This enables opportunities to depart from traditional prescriptive code compliance in regard to fire department road access and allows opportunities for reducing road surface through design, using non-road substrates, drivable turf, mountable curbs, and apparatus-specific bays and pathways. This approach makes possible a **reduction of impervious surface and greater use of development space; thus contributing to sustainable construction**.